



IFW

PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re the application of:

GOGGIN

Serial No.: 10/798,323

Group Art Unit: 1732

Filed: March 12, 2004

For: HOLLOW PLASTIC ARTICLE

CLAIM TO PRIORITY

Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

Sir:

The benefit of the filing date of the prior foreign application filed in the following foreign country(ies) is hereby requested and the right of priority provided in 35 U.S.C. §119 is hereby claimed:

Ireland Application No. 2003/0190 filed 13 March 2003.

In support of this claim, filed herewith is a certified copy of said foreign application.

Respectfully submitted,

JACOBSON HOLMAN PLLC

By: \_\_\_\_\_

John C. Holman  
Reg. No. 22,769

400 Seventh Street, N.W.  
Washington, D.C. 20004-2201  
Telephone: (202) 638-6666

Atty. Docket No.: P69584US0  
Date: August 27, 2004  
JCH:crj

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I HEREBY CERTIFY that annexed hereto is a true copy of documents filed in connection with the following patent application:

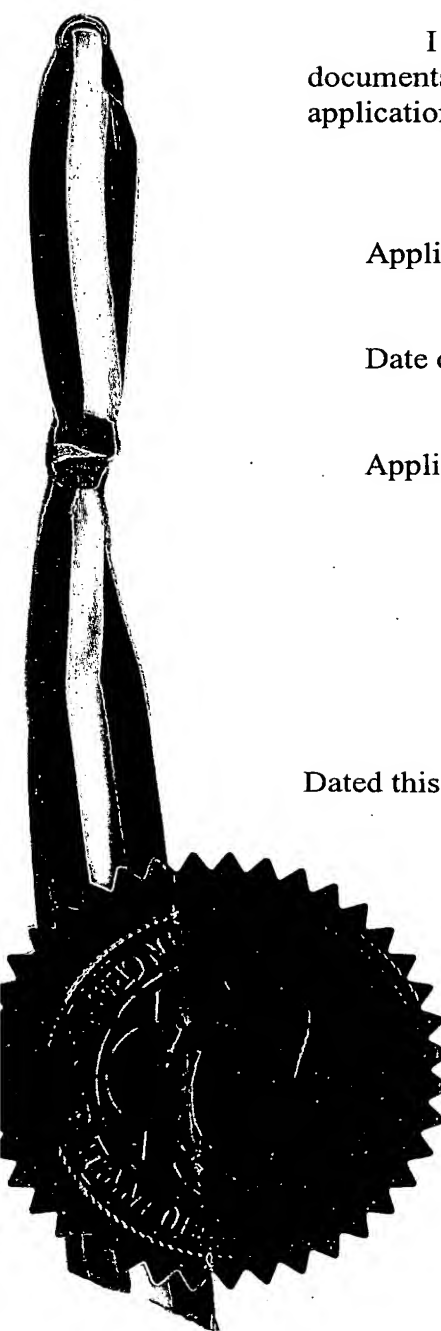
Application No. 2003/0190

Date of Filing 13 March 2003

Applicant NYPRO RESEARCH AND DEVELOPMENTS LIMITED, an Irish company of Corke Abbey, Bray, County Wicklow.

Dated this 9 day of March 2004.

An officer authorised by the  
Controller of Patents, Designs and Trademarks.



# REQUEST FOR THE GRANT OF A PATENT

## PATENTS ACT, 1992

The Applicant(s) named herein hereby request(s)

  X   the grant of a patent under Part II of the Act  
       the grant of a short-term patent under Part III of the Act on the basis of the information furnished hereunder.

1. Applicant(s)

Name NYPRO RESEARCH AND DEVELOPMENTS LIMITED

Address Corke Abbey  
 Bray  
 County Wicklow

Description/Nationality

An Irish company

2. Title of Invention

"A method"

3. Declaration of Priority on basis of previously filed application(s) for same invention (Sections 25 & 26)

Previous filing date

Country in or for which filed

Filing No.

4. Identification of Inventor(s)

Name(s) of person(s) believed  
by Applicants(s) to be the inventor(s)

Name: James Goggin, an Irish citizen

Address: c/o Nypro Research and Developments Limited, Corke Abbey,  
 Bray, County Wicklow, Ireland.

5. Statement of right to be granted a patent (Section 17(2) (b))

The Applicant derives the rights to the Invention by virtue of a Deed of Assignment dated March 13, 2003.

6. Items accompanying this Request – tick as appropriate

- (i)   X   Prescribed filing fee (€125.00)
- (ii)   X   Specification containing a description and claims  
       Specification containing a description only  
  X   Drawings referred to in description or claims
- (iii)        An abstract
- (iv)        Copy of previous application(s) whose priority is claimed
- (v)        Translation of previous application(s) whose priority is claimed
- (vi)   X   Authorisation of Agent (this may be given at 8 below if this Request is signed by the Applicant (s))

7. Divisional Application (s)

The following information is applicable to the present application which is made under Section 24 –

Earlier Application No: .....

Filing Date: .....

8. Agent

The following is authorised to act as agent in all proceedings connected with the obtaining of a patent to which this request relates and in relation to any patent granted -

Name

John A. O'Brien & Associates

Address

The address recorded for the time being in the Register of Patent Agents, and currently Third Floor, Duncairn House, 14 Carysfort Avenue, Blackrock, Co. Dublin, Ireland.

9. Address for Service (if different from that at 8)

As above

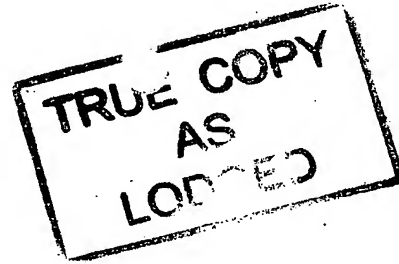
Signed

Date

March 13, 2003

 JOHN A. O'BRIEN & ASSOCIATES

"A Method"



### Introduction

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The invention relates to hollow plastic devices which are designed to take up and maintain a particular orientation in use, for example, to float on top of a liquid with one portion submerged below the surface of a liquid and another portion extending above the liquid surface.

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It is known to mould such hollow articles from a plastics material. In general, the articles are moulded with a thicker wall cross section in the region to be submerged below the liquid surface. One such prior art article which in this case is substantially spherical is illustrated in Fig. A.

15

Conventionally, such known articles are manufactured by injection moulding. The injection moulding process involves heating a plastic resin until it is in a liquid state. It is then injected into a mould. The injection time or fill time for a moulding product is typically less than a second. However, the product cannot be removed from the moulding tool until the plastic has returned to a solid state. To help cool the product water or cooling channels are incorporated into the moulding tool and water is pumped through these channels to remove heat and quicken the solidification of the plastic product. However, even with optimisation of such parameters the cooling element of the cycle time is generally the longest part of the cycle. This is especially a problem with articles of this type with regions of thick wall cross section.

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There is therefore a need for a hollow plastic article of this type which can be more readily and speedily moulded.

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### Statements of Invention

5 According to the invention there is provided a hollow plastic article having a desired in-use orientation, the article comprising a hollow body with a lower portion and an upper portion, the hollow article having an outer wall of substantially uniform thickness.

10 In one embodiment the article has an integrally moulded ballast, the ballast having substantially the same wall thickness as that of the outer wall of the article. The ballast may comprise a rib extending from the wall of the article. The rib may extend inwardly from the lower portion of the hollow article.

15 In one embodiment the ballast comprises a plurality of ribs. The ribs may be spaced-apart peripherally inside the hollow article. At least some of the ribs may be of differing length.

20 In one embodiment the article is of generally spherical shape. In this case the article may have integrally moulded ballast ribs which extend generally radially inwardly of the outer wall of the hollow body.

### Brief Description of the Drawings

25 The invention will be more clearly understood from the following description thereof given by way of example only with reference to the accompanying drawings, in which:-

30 Fig. A is a cross sectional view of a hollow plastic article of the prior art; and

Fig. 1 is a cross sectional view of a hollow plastic article according to the invention.

### Detailed Description

5 Referring to Fig. 1 there is illustrated a moulded plastics article 1 comprising a hollow body which in this case is of generally spherical shape with a lower portion 2 and an upper portion 3. In a desired in-use orientation of the article illustrated, the lower portion 2 of the body is lowermost and the upper portion 3 is uppermost. For example, the article may float on top of a liquid with part of the lower portion  
10 submerged below the surface of the liquid and the upper portion extends above the liquid surface.

The article has an integrally moulded ballast which in this case is in the form of a number of inwardly projecting ribs 10 which extend generally radially from the wall  
15 of the lower portion of the hollow body. It will be noted that the ribs 10 are of different lengths, the longer ribs being provided at the lowest section of the body and the radial extent of the ribs decreasing upwardly.

The thickness of the outer wall of the hollow body and the thickness of the ribs 10 is  
20 substantially the same. Thus the article has substantially uniform wall thickness.

The invention provides the introduction of features which are the same wall thickness as the overall body of the device i.e. – uniform. The position of these features is important as their position in the device will give the ballast and  
25 orientation affect. These features may vary in their shape. The geometry of certain designs may require such features to be made to the outside of the hollow body.

By introducing a uniform wall thickness the device can be designed with a thinner wall section than currently used. Therefore mould cooling time is reduced. If the  
30 moulding cooling time is reduced the overall moulding cycle time is reduced and more parts per hour can be produced from the moulding process. This offers a

considerable cost saving. More parts per hour can be produced from a moulding tool and machine. Less capital investment (per unit) is required to produce parts of a thinner wall section.

- 5 The invention is not limited to the embodiments hereinbefore described which may be varied in detail.



Claims

- 5 1. A hollow plastic article having a desired in-use orientation, the article comprising a hollow body with a lower portion and an upper portion, the hollow article having an outer wall of substantially uniform thickness.
- 10 2. An article as claimed in claim 1 wherein the article has an integrally moulded ballast, the ballast having substantially the same wall thickness as that of the outer wall of the article.
- 15 3. An article as claimed in claim 2 wherein the ballast comprises a rib extending from the wall of the article.
4. An article as claimed in claim 3 wherein the rib extends inwardly from the lower portion of the hollow article.
- 20 5. An article as claimed in any of claims 2 to 4 wherein the ballast comprises a plurality of ribs.
6. An article as claimed in claim 5 wherein the ribs are spaced-apart peripherally inside the hollow article.
- 25 7. An article as claimed in claim 5 or 6 wherein at least some of the ribs are of differing length.
8. An article as claimed in any preceding claim wherein the article is of generally spherical shape.

9. An article as claimed in claim 8 wherein the article has integrally moulded ballast ribs which extend generally radially inwardly of the outer wall of the hollow body.

5 10. A hollow plastic article substantially as hereinbefore described.

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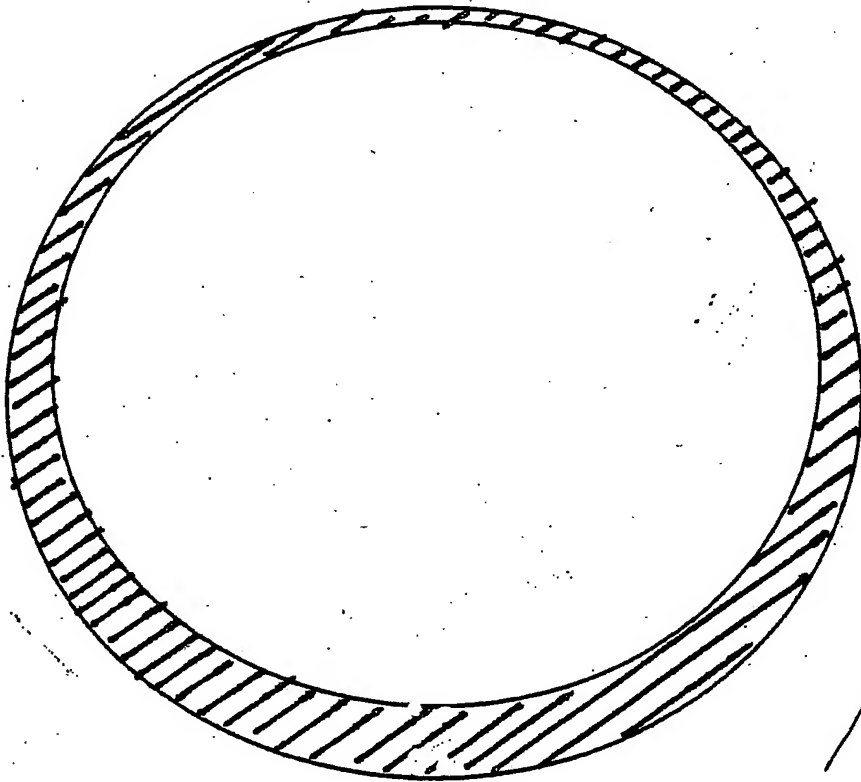


Fig. A

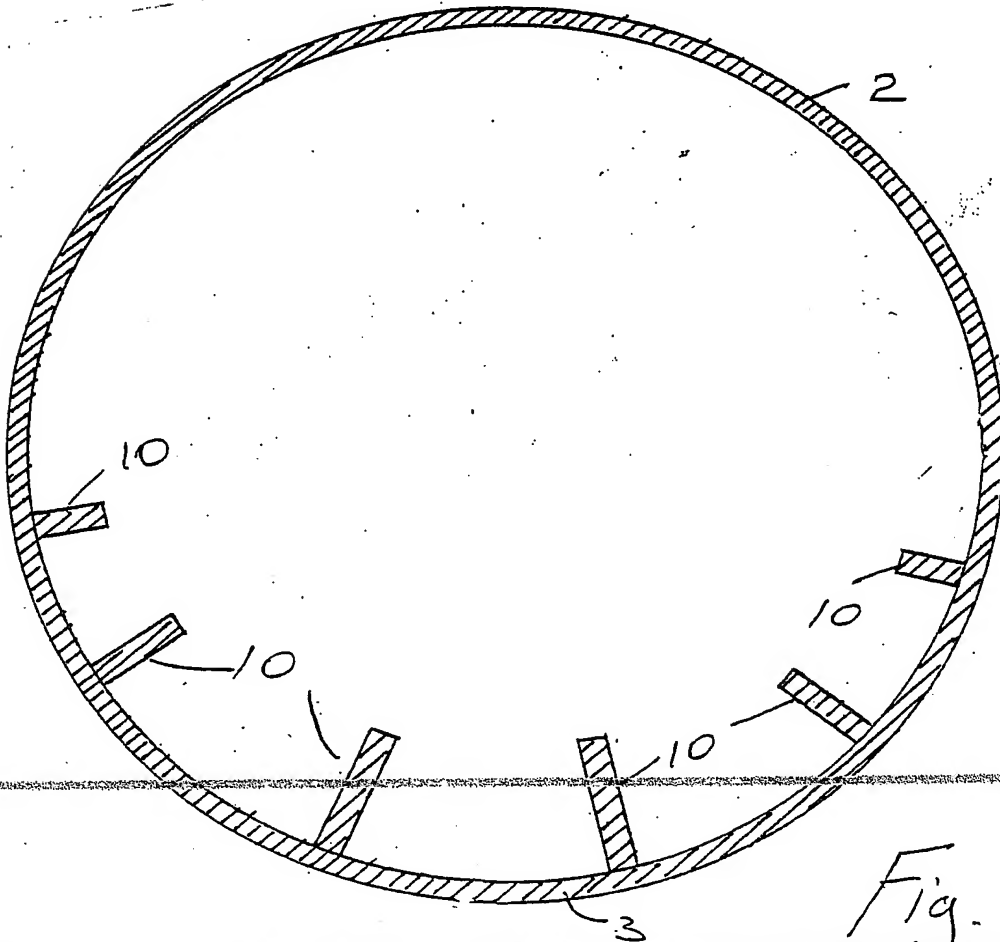


Fig. 1

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